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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,321	10/01/2001	Jonathon Michael Blackburn	0623.0860002/LBB/Y-W	4288
35437	7590	07/13/2005		
MINTZ LEVIN COHN FERRIS GLOVSKY & POPEO 666 THIRD AVENUE NEW YORK, NY 10017			EXAMINER LAM, ANN Y	
			ART UNIT 1641	PAPER NUMBER

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,321

Applicant(s)

BLACKBURN ET AL.

Examiner

Ann Y. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 13, 16-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 8-12, 14 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 13, 16-24 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I (claims 1-4, 13, 16-24 and 26) in the reply filed on April 20, 2005 is acknowledged. The traversal is on the ground(s) that it would not be an undue burden to examine all the claims. This is not found persuasive because the groups require different search and consideration as explained in the restriction requirement and thus would be an undue burden on examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claims 8-12, 14 and 25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 13, 18-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morin et al., 6,610,839, in view of Chin et al, 6,197,599.

Morin et al. discloses the invention substantially as claimed. As to claim 1, Morin discloses a method comprising

(a) inserting a marker DNA sequence in frame immediately preceding a stop codon of each of a plurality of target DNA sequences to form a plurality of modified DNA sequences which encode a plurality of modified amino acid sequence each comprising a marker moiety (col. 156, lines 20-25);

(b) expressing the plurality of modified amino acid sequences from the plurality of modified DNA sequences (col. 156, lines 25-29);

(c) bringing the plurality of modified amino acid sequences into contact with a solid support wherein the marker moiety of the plurality of modified amino acid sequences is able to attach to the solid support (col. 43, lines 27-34), and

(d) washing said solid support to remove unbound proteins (col. 43, lines 30-34).

Morin et al. teaches use of the fusion protein system to isolate specific proteins and peptides (col. 43, lines 27-29.) However, Morin et al. does not teach that the bound proteins are in an array. This limitation is taught by Chin et al.

Chin et al. teaches that proteins immobilized on a solid support can be immobilized in an array, or specific position, so it can be identified by its position and further characterized thereby allowing for study of a wide variety of proteins in a single experiment by a large number of proteins on a support (col. 2, line 60 – col. 3, line 3.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the immobilized proteins in the Morin et al. invention in the form of an array as taught by Chin et al. for the advantage of identifying a protein based on its position and studying a wide variety of proteins in a single experiment for convenience.

As to the following claims, Morin et al. discloses the limitations as follows.

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As to claim 2, the tag is a peptide sequence (col. 156, line 22).

As to claim 3, the tag allows for purification of the individual proteins in the array (col. 43, lines 27-29).

As to claim 4, the tag is inserted such that the start or stop codon for each of the proteins is replaced (column 156, lines 22-23).

As to claims 13 and 26, the array is used to immobilize specific antibodies (col. 43, lines 34-35).

As to claim 18, the protein array comprises kinases (col. 26, line 26.)

As to claim 19, the plurality of modified amino acid sequences are modified human amino acid sequences (see abstract, "human telomerase reverse transcriptase").

As to claim 20, Morin et al. teaches a FLAG marker moiety (col. 153, line 54.)

As to claims 21-23, the marker moiety is post-translationally modified (col. 49, line 44), such as addition of a lipid (col. 49, line 43), and the modified amino acid sequences are folded into the correct formation (col. 49, line 45.)

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morin et al., 6,610,839, in view of Chin et al, 6,197,599, and further in view of Ben-Bassat et al., 4,865,974.

Morin et al. discloses the invention substantially as claimed. Morin discloses a method comprising:

(a) inserting a marker DNA sequence in frame immediately preceding a stop codon of each of a plurality of target DNA sequences to form a plurality of modified DNA sequences which encode a plurality of modified amino acid sequence each comprising a marker moiety (col. 156, lines 20-25);

(b) expressing the plurality of modified amino acid sequences from the plurality of modified DNA sequences (col. 156, lines 25-29);

(c) bringing the plurality of modified amino acid sequences into contact with a solid support wherein the marker moiety of the plurality of modified amino acid sequences is able to attach to the solid support (col. 43, lines 27-34), and

(d) washing said solid support to remove unbound proteins (col. 43, lines 30-34).

Morin et al. teaches use of the fusion protein system to isolate specific proteins and peptides (col. 43, lines 27-29.) However, Morin et al. does not teach that the bound proteins are in an array. This limitation is taught by Chin et al.

Chin et al. teaches that proteins immobilized on a solid support can be immobilized in an array, or specific position, so it can be identified by its position and further characterized thereby allowing for study of a wide variety of proteins in a single experiment by a large number of proteins on a support (col. 2, line 60 – col. 3, line 3.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the immobilized proteins in the Morin et al. invention in the form of an array as taught by Chin et al. for the advantage of identifying a protein based on its position and studying a wide variety of proteins in a single experiment for convenience.

Also, neither Morin et al. nor Chin et al. disclose the steps of digesting the target DNA sequence, annealing the marker DNA sequence and ligating the marker DNA sequence as claimed by Applicant. Although Morin et al. teaches that the hTERT stop codon is removed and replaced by vector sequences encoding for the Myc epitope and the His6 reporter tag (col. 156, lines 22-25), Morin et al. does not specifically disclose the steps for removing and replacing the DNA sequences. Ben-Bassat et al. teaches that the steps of digesting, annealing and ligating are well known in the art for removing and replacing DNA sequences.

Ben-Bassat et al. teaches that construction of suitable vectors containing the desired coding and control sequences employs standard ligation and restriction techniques which are well understood in the art (col 8, lines 3-6.) Bassat et al. teaches restriction enzymes for digestion of DNA sequences (col. 8, lines 9-10), annealing (col. 8, line 53) and ligation steps (col. 8, line 59.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the steps of digestions, annealing and ligation as taught by Ben-Bassat et al. for the steps of removing and replacing DNA sequences in the Morin et al. method because Ben-Bassat et al. teaches that these steps are well known in the art for removing and replacing DNA sequences.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morin et al., 6,610,839, in view of Chin et al, 6,197,599, and further in view of Orr et al., 5,741,645, and Nielsen et al., 6,350,853.

Morin et al. discloses the invention substantially as claimed. Morin discloses a method comprising:

(a) inserting a marker DNA sequence in frame immediately preceding a stop codon of each of a plurality of target DNA sequences to form a plurality of modified DNA sequences which encode a plurality of modified amino acid sequence each comprising a marker moiety (col. 156, lines 20-25);

(b) expressing the plurality of modified amino acid sequences from the plurality of modified DNA sequences (col. 156, lines 25-29);

(c) bringing the plurality of modified amino acid sequences into contact with a solid support wherein the marker moiety of the plurality of modified amino acid sequences is able to attach to the solid support (col. 43, lines 27-34), and

(d) washing said solid support to remove unbound proteins (col. 43, lines 30-34).

Morin et al. teaches use of the fusion protein system to isolate specific proteins and peptides (col. 43, lines 27-29.) However, Morin et al. does not teach that the bound proteins are in an array. This limitation is taught by Chin et al.

Chin et al. teaches that proteins immobilized on a solid support can be immobilized in an array, or specific position, so it can be identified by its position and further characterized thereby allowing for study of a wide variety of proteins in a single experiment by a large number of proteins on a support (col. 2, line 60 – col. 3, line 3.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the immobilized proteins in the Morin et al. invention in the form of an

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array as taught by Chin et al. for the advantage of identifying a protein based on its position and studying a wide variety of proteins in a single experiment for convenience.

Also, neither Morin et al. nor Chin et al. disclose two markers, one immediately following a start codon and one immediately preceding a stop codon. Orr et al. discloses this limitation.

Orr et al. teaches the use of two flanking markers for the advantage of isolating region-specific DNA markers (col. 16, lines 40-44.) Moreover, Nielsen et al. teaches a marker sequence immediately following a start codon (col. 33, lines 23-26.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide two flanking markers as taught by Orr et al. in the Morin et al. method because Orr et al. teaches that it provides the advantage of isolating region-specific DNA markers, and it would have been obvious to one of ordinary skill in the art to provide the second marker immediately following a start codon as taught by Nielsen et al. as a known location for inserting a marker. Also, Applicant has not disclosed a use for inserting a marker immediate to the start codon that is a different use from that shown in the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on M-Sat 11-6:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.L.




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PRIMARY EXAMINER
GROUP 1800-1641
7/11/05